



HOMESTEAD

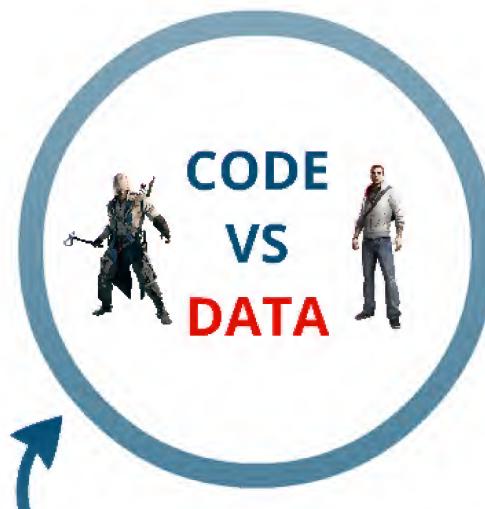
CODE, DATA AND TOOLS

Pierre-Luc Vachon
Gameplay Programmer
Ubisoft Québec

**DATA IS POWERFUL
BUT DANGEROUS**



**CREATIVE AND
FLEXIBLE TOOLS**



**GENERIC CODE
EMBRACE DATA**



CODE VS DATA



CODE-DRIVEN BEHAVIORS AND INTERACTIONS CREATED WITH CODE LOGIC

CLASSIC



OLD-SCHOOL



CODE-DRIVEN **BEHAVIORS AND INTERACTIONS** **CREATED WITH CODE LOGIC**

CLASSIC



OLD-SCHOOL



THE PROGRAMMER IS DOING ALL THE WORK

PROS

CONS

PROS

SHARED FOR EACH IMPLEMENTATIONS
OPTIMIZED
NO LIMIT
ERRORS ARE EASY TO IDENTIFY
LOT OF POWERFUL **TOOLS** FOR DEBUG

CONS

LOT OF **COMMUNICATION**
DELAYS IN LARGE SCALE
PRODUCTION
SIMPLE FEATURES CAN BE **COSTLY**
FLEXIBILITY

DATA-DRIVEN BEHAVIORS AND INTERACTIONS CREATED WITH DATA LOGIC

MODERN



CREATOR-FRIENDLY



DATA-DRIVEN BEHAVIORS AND INTERACTIONS CREATED WITH DATA LOGIC

MODERN



CREATOR-FRIENDLY



THE DESIGNER OR INTEGRATOR IS DOING THE WORK

PROS

CONS

PROS

FAST ITERATIONS
LESS **COMMUNICATION**
EASY TO CREATE SPECIFIC CASES
ALMOST NO **DOWNTIME**

CONS

MIGHT NOT BE **OPTIMAL**
SPECIFIC INSTANCES
HARD TO **MANAGE AND DEBUG**
COMPLEXITY

CODE VS DATA



FUL
S



The **HOMESTEAD**

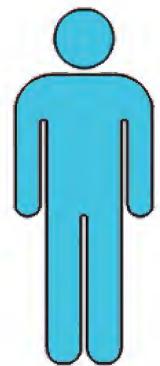


THE HOMESTEAD

Monteriggioni V2.0



**BUILDING ON
ASSASSIN'S CREED
TECHNOLOGY**



**CHARACTERS ARE LIKE
PUPPETS**

UNIQUE CHARACTERS







UNIQUE CHARACTERS

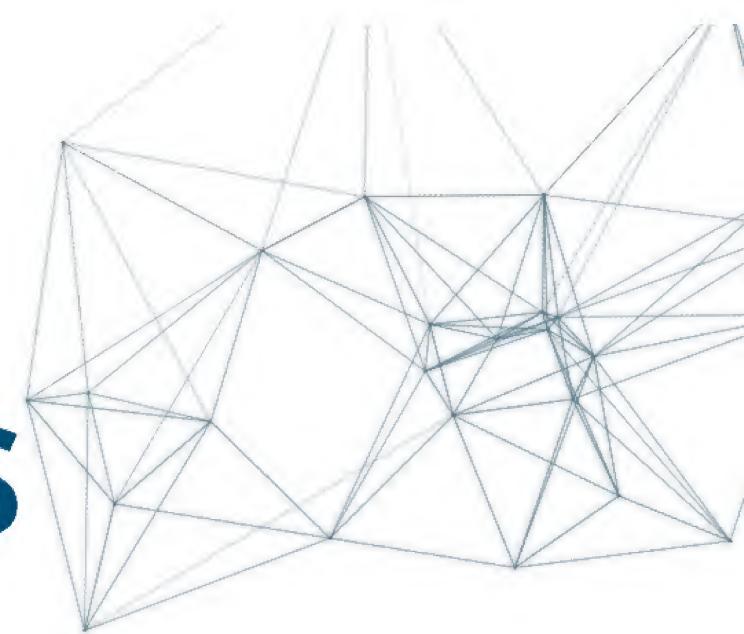


WHAT WE WANT



NPC TO BEHAVE AS CLOSE AS A REAL LIFE CHARACTER
WITH A FULL DAY OF INTERACTIONS
WITHOUT TRANSITIONS OR GLITCHES

FEATURES



NPC IS **UNIQUE** AND INFLUENCED BY
PARAMETERS

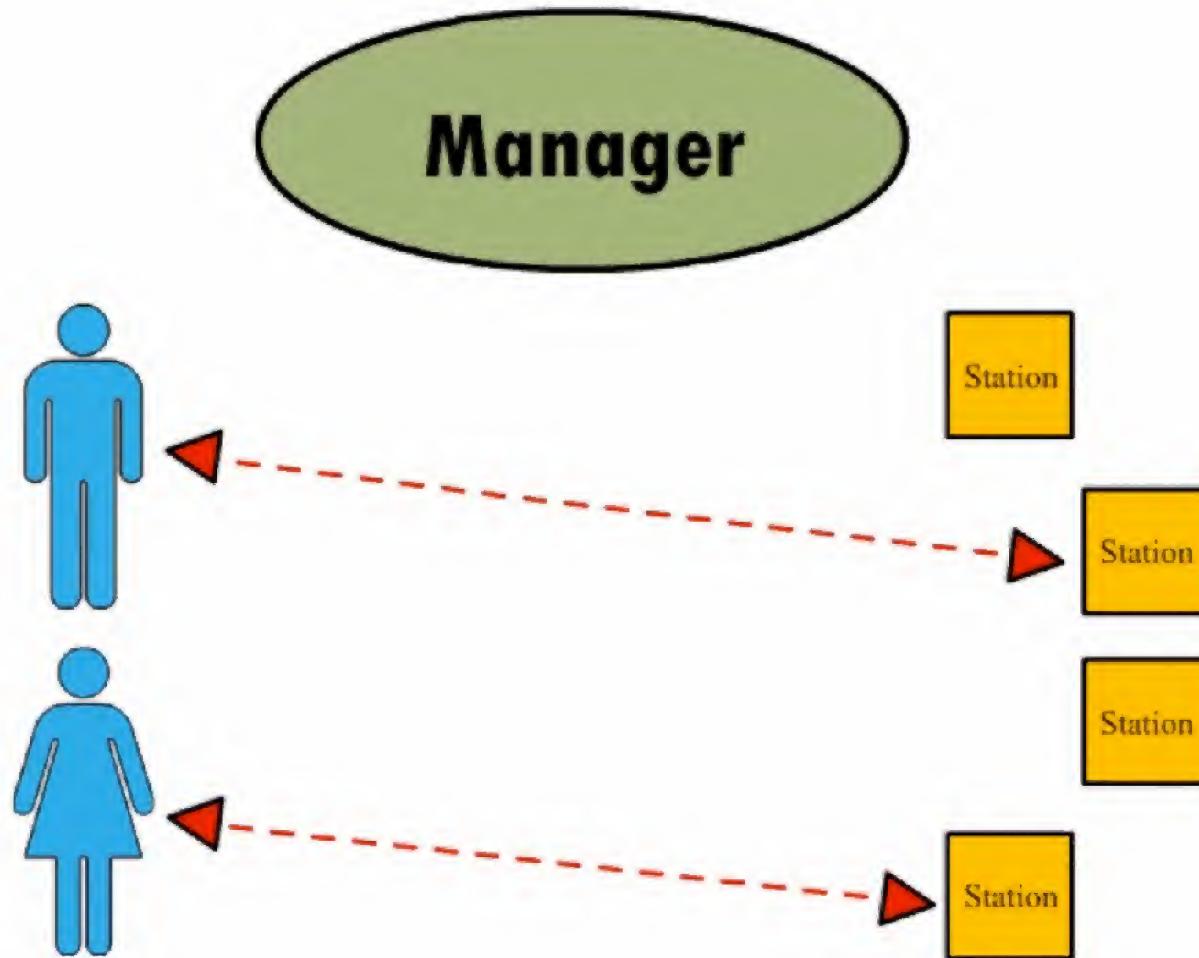
NON-STOP GENERIC OR SPECIFIC ACTIVITIES

NPC CAN **INTERACT**

MAXIMUM QUALITY

**FIRST
PROTOTYPE**
A MANAGER IS HANDLING EACH NPC





FIRST PROTOTYPE

A MANAGER IS HANDLING EACH NPC



THIS IS MOSTLY A **CODE-DRIVEN** SOLUTION

FIRST PROTOTYPE

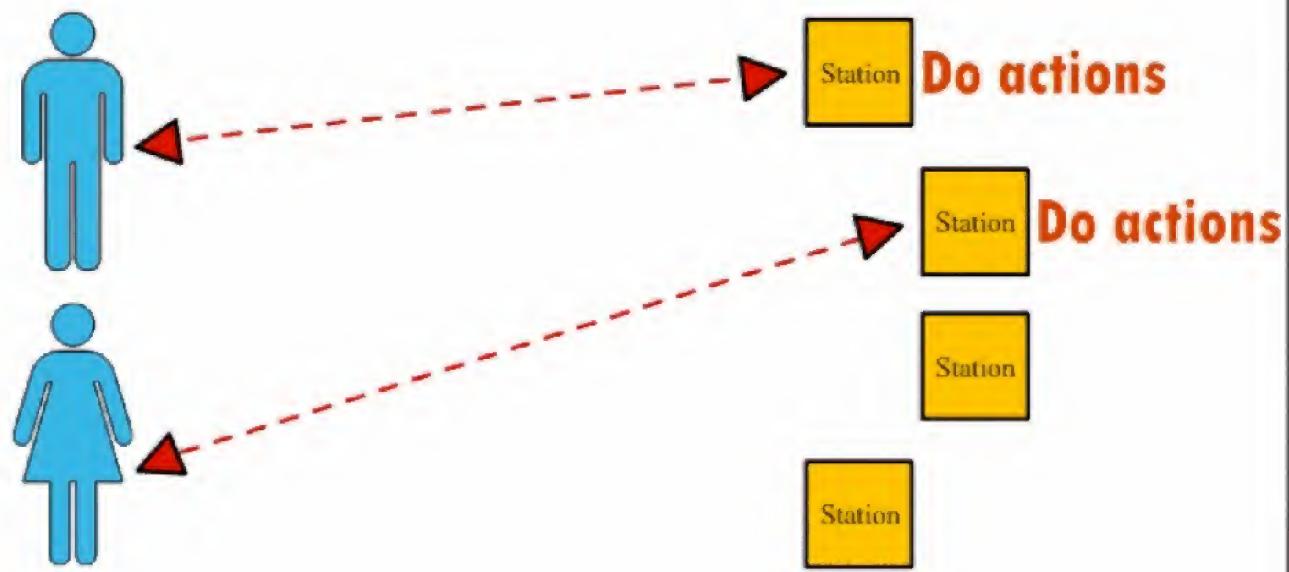


LOT OF DUPLICATION

SECOND PROTOTYPE



NO MANAGER, ALL STATIONS ARE INDEPENDENT





THIS IS MOSTLY A DATA-DRIVEN SOLUTION

SECOND PROTOTYPE

COLLABORATION WITH OTHER STUDIOS
GENERIC SOLUTION

COMPLEXITY

GYM



ENSURE THAT WE **CAN DO IT**
REFERENCE FOR THE TEAM

PRODUCTION

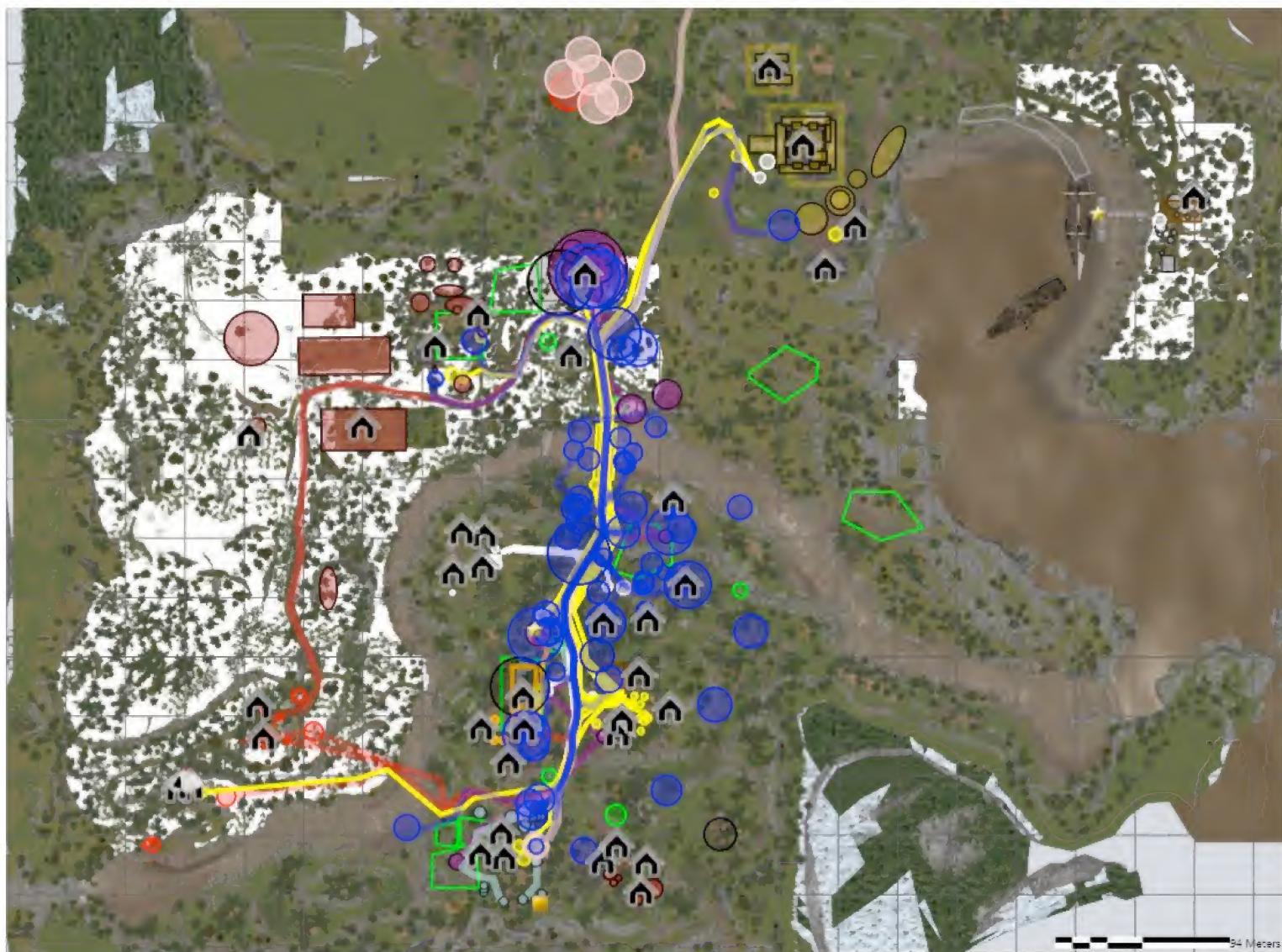
WOODWORKER
AND
HUNTRESS



REAL
PROBLEMS
EMERGED

USING **DATA** SETUP
WE CREATED **CLUSTERS**

NAVIGATION
HOMESTEAD LAYOUT BRINGS
LONG DISTANCE





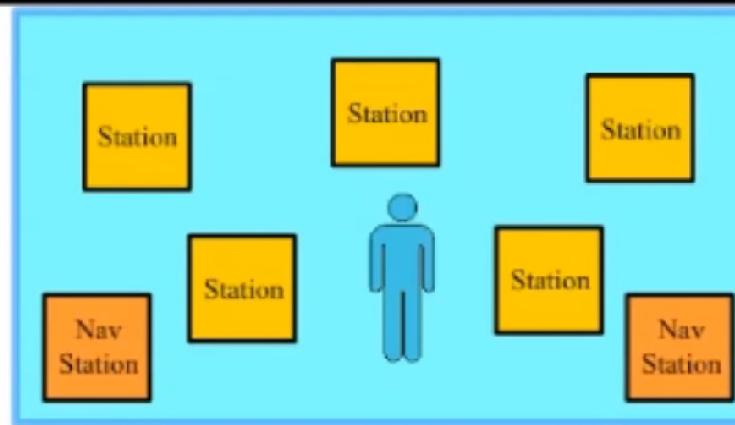


~~WE DON'T WANT THE BEST PATH~~
WE WANT THE NICEST PATH



USING DATA SETUP
WE CREATED **CLUSTERS**

NAVIGATION
HOMESTEAD **LAYOUT** BRINGS



AND PICKING THROUGH YOUR TRASH.

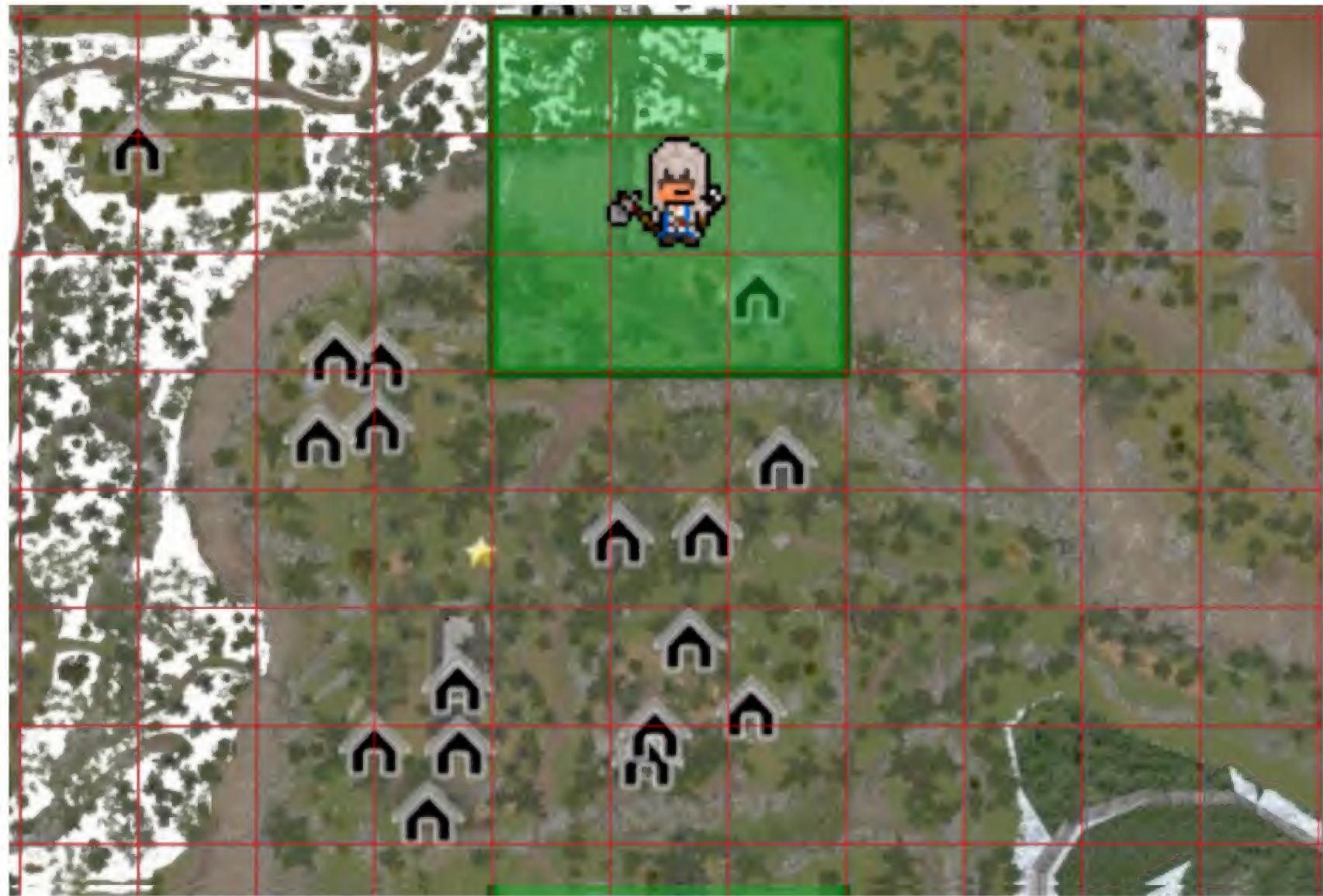
WE CREATED A SMALL TRACKING CLASS **OMNI NPC**

NPC CAN SPAWN
AT
MULTIPLE PLACES

WE CAN ENSURE IT TO BE UNIQUE

...BUT WHAT ABOUT
BEING CONSISTENT?





AND PICKING THROUGH YOUR TRASH.

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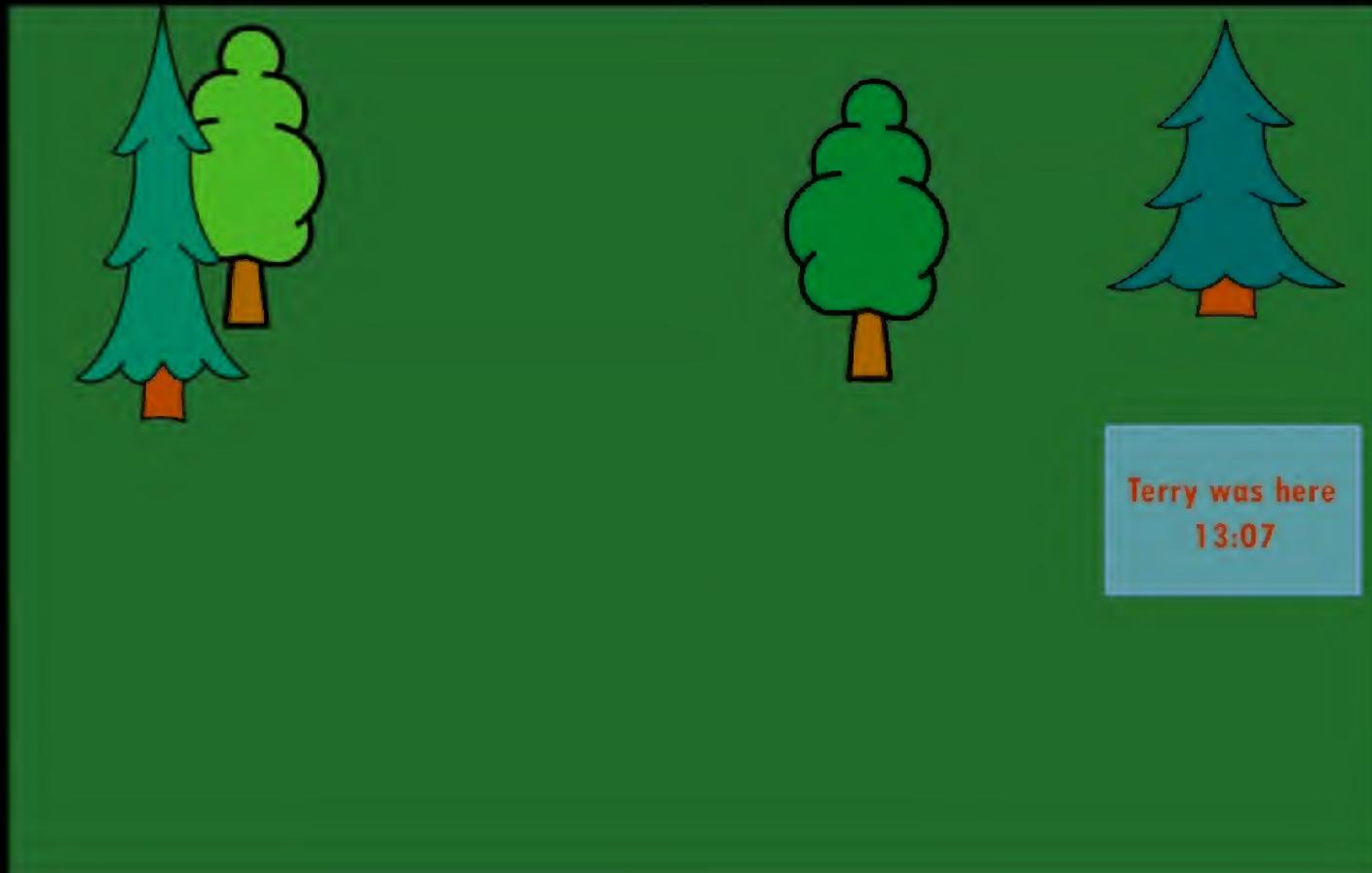
BIG BROTHER



**IS WATCHING
YOU, LISTENING
IN ON YOUR CALLS,
READING YOUR EMAIL,
INSPECTING YOUR INTERNET HABITS,
AND PICKING THROUGH YOUR TRASH.**

**WE CREATED A SMALL TRACKING CLASS
OMNI NPC**

**NPC CAN SPAWN
AT
MULTIPLE PLACES**





**WE HAVE TO MANUALLY
SET IT IN EACH STATION**





**WE REALLY WANTED
TO HAVE "REAL"
INDOOR/OUTDOOR
TRANSITIONS**



**WE WANTED TO SEE OUR NPC
DOING THOSE TRANSITIONS**

HOW CAN WE ACHIEVE THIS?

WE BRING BACK COURTESY



DOING THOSE TRANSITIONS

HOW CAN WE ACHIEVE THIS?

WE BRING BACK COURTESY





POST-PRODUCTION

20 UNIQUE NPC

500+ UNIQUE STATIONS

2000+ PARAMETERS

WAS IT A GOOD IDEA ?

**MAYBE NOT THE
DECT**

**"IT'S ONE OF THE GREAT TRAGEDY
OF LIFE – SOMETHING
ALWAYS
CHANGES."**



-Dr. Gregory House

500+ UNIQUE STATIONS
2000+ PARAMETERS

WAS IT A GOOD IDEA ?

MAYBE NOT THE
BEST
BUT SURELY NOT THE
WORST

HOW CAN WE DO BETTER ?

FUL
S





TOOLS



EDITOR





WHY NOT CREATE OUR
OWN **TOOLS** **IN IT** ?



**WHY NOT CREATE OUR
OWN TOOLS IN IT ?**

COST TIME AND MONEY
USED BY A SMALL FRACTION OF THE TEAM
MAINTENANCE
STABILITY

THE FORGOTTEN

YOU ALL **USED IT AND KNOW IT**



MASSIVE DATA MANIPULATION

DATA
TEMPLATE



CREATE DATA
MANIPULATION
IN CODE



MASSIVE DATA MANIPULATION

DATA
TEMPLATE



CREATE DATA
MANIPULATION
IN CODE

SCRIPTING YOUR EDITOR
CREATE SPECIFIC TOOLS

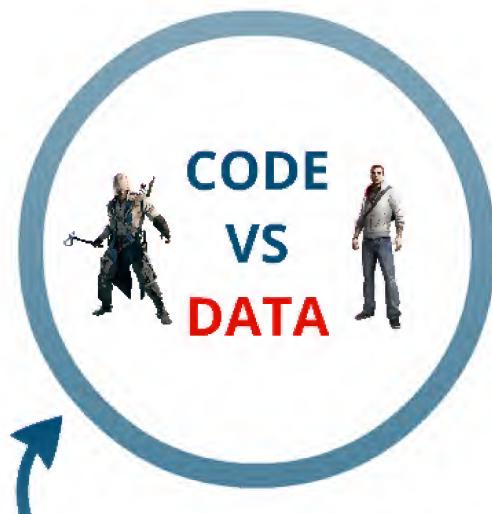
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**CREATIVE AND
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**CODE
VS
DATA**



**GENERIC CODE
EMBRACE DATA**

CREDITS

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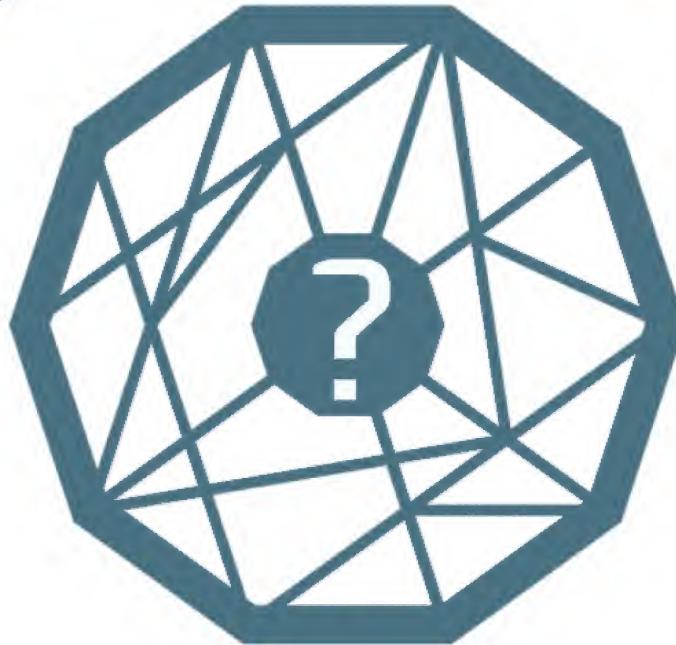
The Montreal AC3 team
Marco, Marçal, Sapin, Yoan

The Quebec AC3 team
Wesley, Gabriel, Thierry



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QUESTIONS

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THE END

Come and see us at the **UBISOFT** booth
if you have questions or want to buy me
a beer. Yes I am easy like that.